A Flexible Integrated Forward/Reverse Logistics Model with Random Path

Motivation
- Significance of transportation cost and customer satisfaction for supply chain managers
- Utilization of returned products for reuse, remanufacture, recycle or disposal
- Short delivery time

Research Objectives
- Connecting the supply chain networks
- Increasing productivity and flexibility
- Considering Multi-stage closed loop supply chain network design problem
- Minimizing the total cost of facilities and transportation
- Applying three kinds of delivery models (normal delivery, direct shipment, direct delivery)

Proposed Approach & Outcome
- Integrate network design decision in both forward and reverse logistics network
- Apply the memetic algorithm (MA) with random path, based on population and local search
- Use LINGO and CPLEX optimization software to find the MA performance
- Test for available real world data

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